富山県より発見されたヒゲエリユスリカ属（Diptera: Chironomidae）の１新種および数種の採集データ

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A New Species of *Parorthocladius* Thienemann (Diptera: Chironomidae) from Toyama Prefecture, Honshu, Japan, with distributional Data of some chironomid Species

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富山県より発見されたヒゲエリユスリカ属 (Diptera: Chironomidae) の1新種および数種の採集データ

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富山市科学博物館の根来尚博士によって富山県内数カ所の雪上で採集されたユスリカを調べる機会を得た。その中に，エリユスリカ亜科 (Orthocladiinae)，*Parorthocladius*（ヒゲエリユスリカ属）の一新種を見いだすことが出来た。採集者に因んで *negoroi* と命名し記載した。

Parorthocladius 属は現在まで、旧北区から３種、東洋区から３種、合計6種が知られている（Lui & Wang 2005)。旧北区３種の内２種は Sasa & Arakawa (1994), Sasa (1996)によりそれぞれ *Hydrobaenus furudoquartus*, *Orthocladius toyamajekeus* の各属の名の下に富山県産の個体に因って日本から記載報告されたものである。これら２種は Sæther et al. (2000)によって *Parorthocladius* に移された。しかし、*Orthocladius toyamajekeus* は模式標本（NSMT-I-Dipt 4969:国立科学博物館）の調査から *Psectrocladius aquatronus* Sasa, 1979 (NSMT-I-Dipt 4498: 国立科学博物館)の新参シノニムであることが判明した（Yamamoto 2004)。それ故、現時点では *Parorthocladius* は世界に５種が分布することが確認されていることとなる。今回記載報告する *Parorthocladius negoroi* sp. nov.は世界から第６番目の種となる。また、*Parorthocladius negoroi* と同様に積雪時に富山県内から採集された７種を富山県の分布データとして付記した。

キーワード：ユスリカ科；エリユスリカ亜科；ヒゲエリユスリカ属；新種；富山；日本
Key words： Chironomidae; Orthocladiinae; *Parorthocladius*; new species; Toyama; Japan

Introduction

Up to the present, the genus *Parorthocladius* includes six species and has a Palaearctic and Oriental distribution (Lui & Wang 2005). Of these 6 species, two Japanese species, *Hydrobaenus furudoquartus* Sasa & Arakawa and *Orthocladius toyamajekeus Sasa,* were transferred to the genus *Parorthocladius* by Sæther et al. (2000). The latter, however, was treated as a junior synonym of *Psectrocladius aquatronus* Sasa by Yamamoto (2004), based on the investigation of the holotype bearing large pad-like pulvilli. Consequently, up to date, it is recognized that five species are distributed in the world.

By the courtesy of Dr. Hisashi Negoro, Toyama Science Museum, I had an opportunity to examine the 6th species of the genus *Parorthocladius,* together with 7 species; *Diamesa alpina* Tokunaga, *D. japonica* Tokunaga, *Synpotthastia takatensis* (Tokunaga), *Diplocladius cultriger* Kieffer, *Orthocladius frigidus* (Zetterstedt), *O. kanii* Tokunaga and *O. saxosus* Tokunaga. These species were collected from Toyama Prefecture in winter on the snow. Here, I describe the new species and give the distributional data with seven species in the following lines.

Methods and material

The terminology and measurements mainly follow Sæther (1980). For male hypopygial structure, the paramere and the basal lobe are used as neutral terms to the phallapodeme carrying aedeagal lobe and the inferior volsella of Sæther (1980), respectively. Material used for description and illustration was mounted on a slide in Euparal.

The type specimen is deposited in the collections of the Toyama Science Museum, Toyama, Japan.

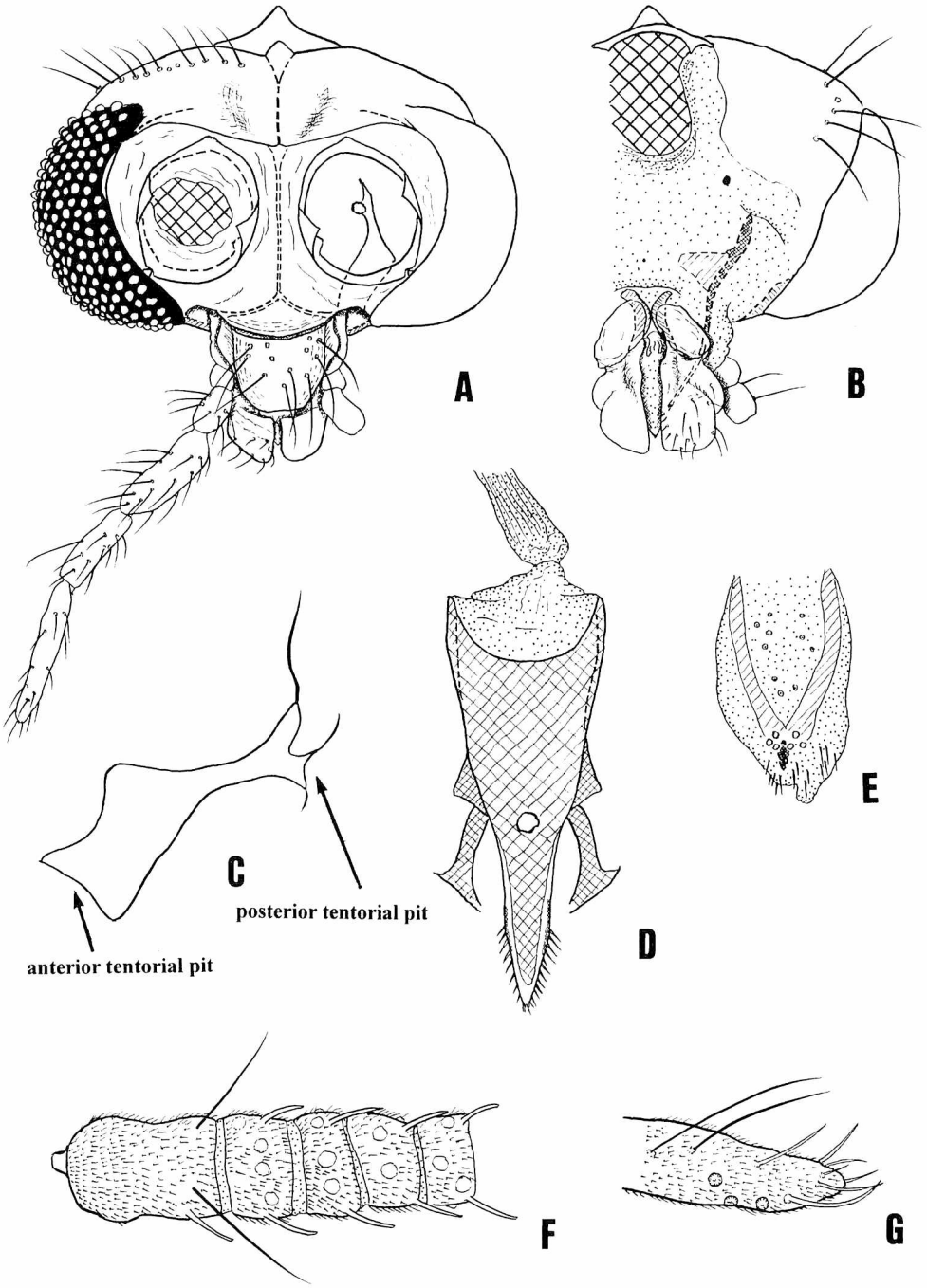

Fig. 1 *Parorthocladius negoroi* sp. nov., Holotype male imago. A, head, frontal view; B, head, caudal view; C, tentorium, lateral view; D, cibarial pump, ventral view; E, epipharynx, ventral view; F-G, antennal flagellum, F, basal five flagellomeres, G, tip of last flagellomere.

Parorthocladius negoroi sp. nov.

Japanese name: Oo-higeeriyusurika (new name)

(Fig. 1 A-G, 2 A-C, 3 A, B)

Type material: Holotype male imago, slide mounted in Euparal: Rendaiji, Nanto-shi, Toyama Pref., Honshu, Japan, 23. I. 2005, Hisashi Negoro (TOYA JI-22940).

Etymology: Named in honour of Dr. Hisashi Negoro, Toyama Science Museum, the collector of the examined material.

Male (n=1)

Total length 3.3 mm. Wing 2.3 mm long, 0.6 mm width; wing length/wing width 3.83.

Coloration. Body including head and legs entirely brown, scutal vittae slightly darkened. Wing hyaline, anterior veins pale brown, posterior veins hyaline. Halter pale brown.

Head (Fig. 1 A-G). First to 5th flagellomeres with 1, 2, 2, 2, 2 blant sensilla basiconica, respectively; last flagellomere with several pointed sensilla basiconica and ringed sensilla coeloconica. AR 1.40. First to ultimate flagellomere lengths (in μm): 64, 24, 24, 20, 24, 24, 24, 28, 28, 28, 28, 32, 536. Palpomere lengths (in μm): 36, 52, 112, 104, 148; with 0, 9, 21, 14, 17 setae, respectively; third palpomere with 2 sensilla clavata. Vertex with 17-19 temporal setae, uniserial. Clypeus with 12 setae. Cibarial pump 60 μm long, cornura well developed.

Thorax (Fig. 2 A, B). Antepronotum well developed, nearly parallel-sided dorsally, distinctly dived by v-shaped notch and contacted with scutum through median commissure. Lateral antepronotals 4; dorsocentals 9-11, uniserial; no acrostichal; prealars 5, uniserial; no supraalar. Preepisternu with 1 seta mid-dorsally. Scutellum with 22 setae, biserial.

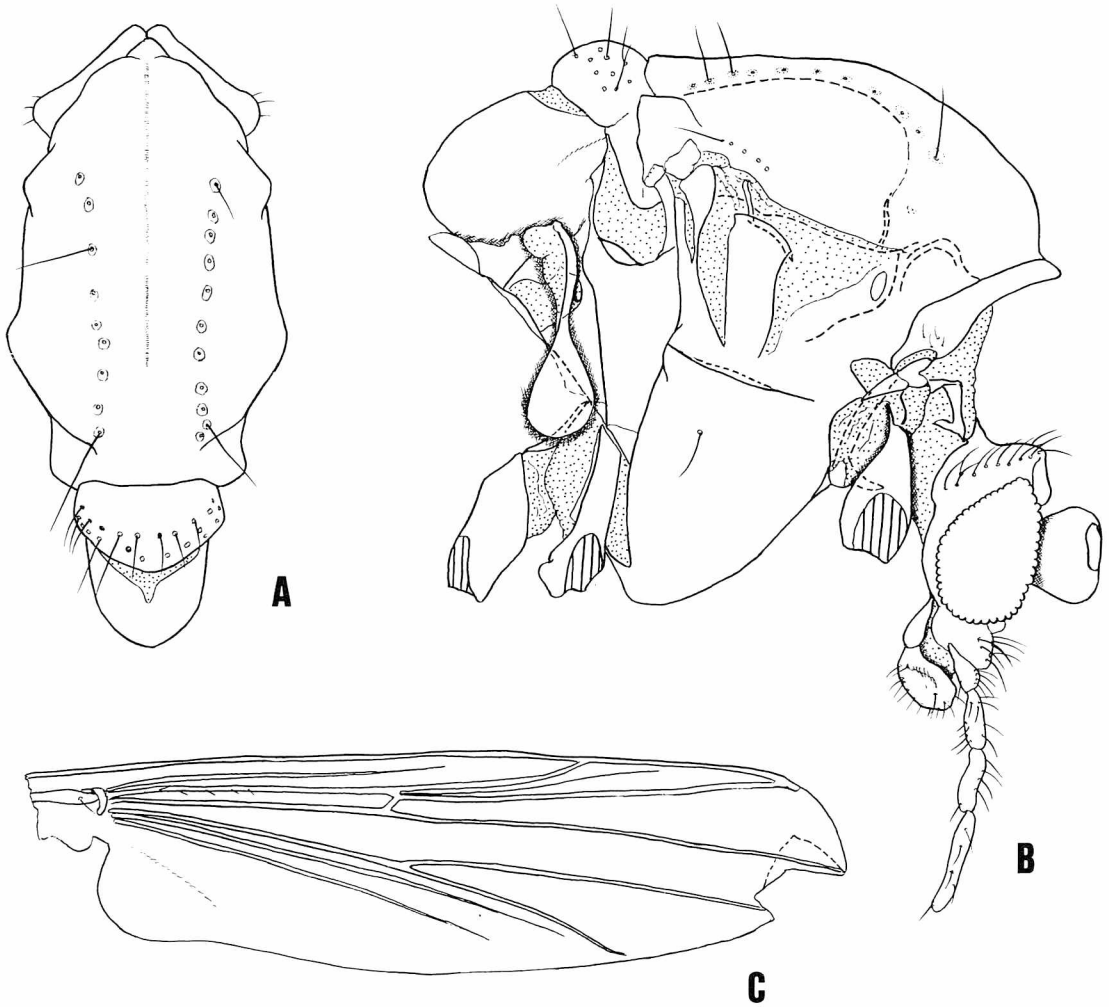

Fig. 2 *Parorthocladius negoroi* sp. nov., Holotype male imago. A, thorax, dorsal view; B, thorax, lateral view ; C, wing.

Table 1. Lengths (in μm) and proportions of legs of Parorthocladius negoroi sp. nov., male (n =1).

	fe	ti	ta1	ta2	ta3	ta4	ta5	LR	BV	SV
p1	720	736	608	384	280	200	128	0.83	2.08	2.40
p2	792	712	400	256	208	128	120	0.56	2.67	3.76
p3	856	840	520	328	256	152	128	0.62	3.90	3.26

Wing (Fig. 2 C). Anal lobe moderately developed. Costal extension nearly as long as r-m cross-vein, 40 μm long. VR 1.10. R with 7-8 setae on basal 1/2. R_1 and R_{4+5} without seta. Brachiolum with 1 median seta; with 10 basal, 3 median and 10 subapical sensilla campaniformia. Squama with 34 setae, biserial.

Legs. Fore-, mid and hind coxae with 5, 4, 6 marginal setae, respectively; fore-, mid and hind trochanters with 7, 4, 5 marginal setae, respectively. Spur of fore tibia 62 μm long; mid tibia with antero-ventral spur 30 μm and postero-ventral one 32 μm long; hind tibia with antero-ventral spur 22 μm long and postero-ventral one 66 μm long. Tibial comb of hind leg composed of 11 spine-like setae. Pseudospurs present on 1-2 tarsomeres of mid and hind legs. Lengths and proportions of legs as in table 1.

Hypopygium (Fig. 3 A. B). Anal point gradually tapering to rounded apex, 58 μm long, 40 μm wide at base and with 11 short lateral setae. Sternum IX with 8-12 setae, dorsolaterally. Transverse sternapodeme without oral projection, and with anterior margin strongly arched. Paramere 74 μm. Virga composed of needle-like 2 spines, 32 μm long. Gonocoxite 220 μm long. Gonostylus slightly arched, 108 μm long. Basal lobe double layered, with dorsal part rather wide and rectangular, well sclerotized. Crista dorsalis well developed. Megaseta 10 μm long.

Distribution. The species is known from type locality only.

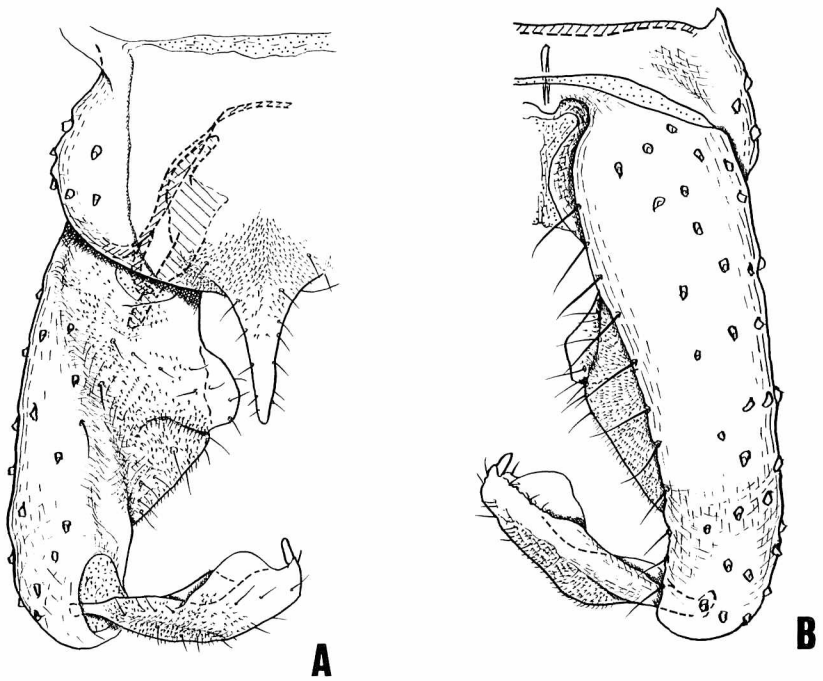

Fig. 3 *Parorthocladius negoroi* sp. nov., Holotype male imago, male hypopygium. A, dorsal view; B, ventral view.

Remarks. *Parorthocladius negoroi* sp. nov. resembles *P. nudipennis* (Kieffer) from Europe and Siberia in the hypopygial structure (Brundin, 1956; Cranston et al., 1989), but is easily separable from the latter by the following combination of characters: scutellum with biserially arranged setae, preepisternu with 1 seta, squama with many biserially arranged fringed setae, anal point long and reaching the level of distal end of dorsal part of basal lobe, transverse sternapodeme strongly arched and without oral projection.

Some other species collected at the mountainous region form Toyama Prefecture on the snow

Diamesinae

1. *Diamesa alpina* Tokunaga, 1936 (Fig. 2, Makarchenko & Yamamoto 1995)

Specimens examined: 1♂, 1♀, Fujibashi, Tateyama-machi, Naka-Niikawa Gun, 18. I. 2004; 3♂♂, as previous except Shichihimedaira, 28. I. 2005; 1♀, as previous except Katsuradai, 2. XII. 2006.

2. *Diamesa japonica* Tokunaga, 1936 (Fig. 4-A)

Specimes examined: 1♂, Fujibashi, Tateyama-machi, Naka-Niikawa Gun, 3. I. 2005; 1♀, Rendaiji, Nanto-shi, 23. I. 2005.

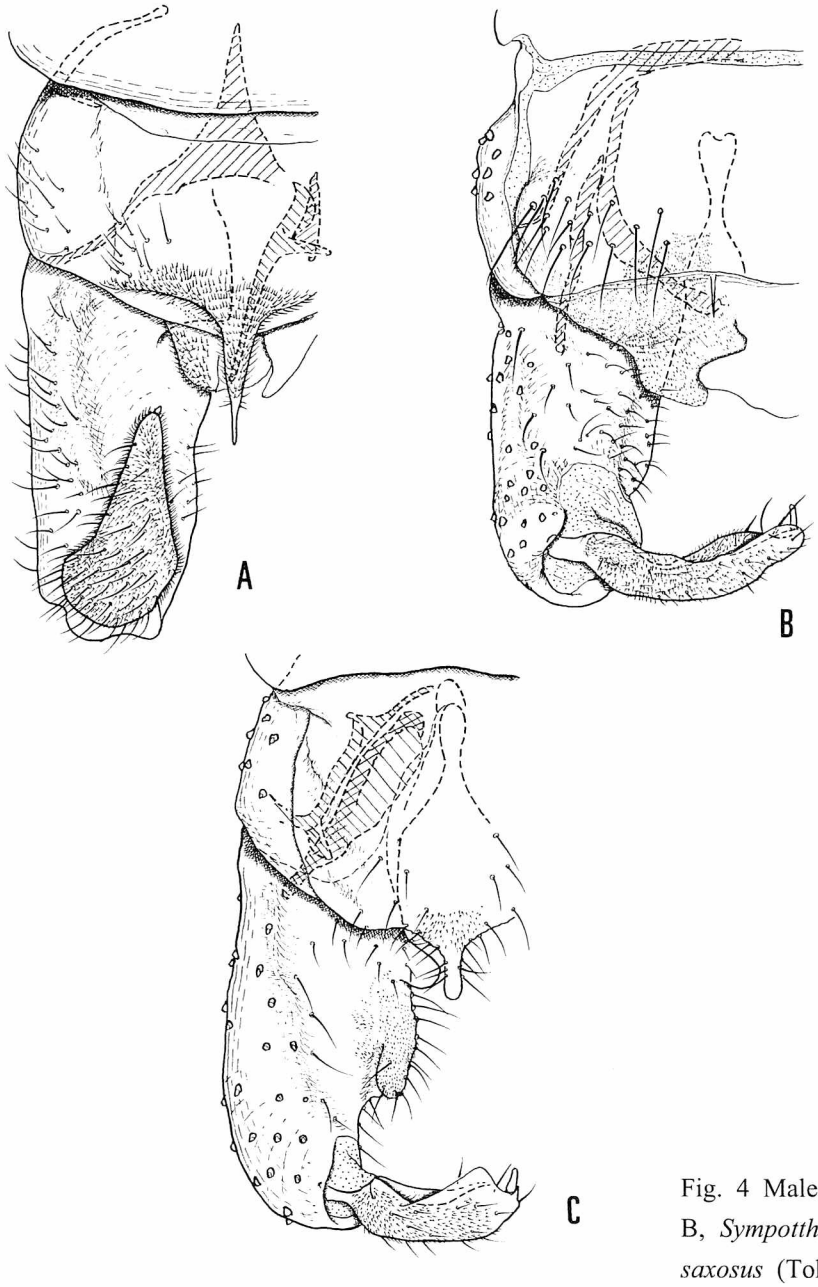

Fig. 4 Male hypopygia. A, *Diamesa japonica* Tokunaga; B, *Sympotthastia takatensis* (Tokunaga); C, *Orthocladious saxosus* (Tokunaga).

3. *Synpotthastia takatensis* (Tokunaga, 1964) (Fig. 4-B)
Specimens examined: 1♂, Rendaiji, Nanto-shi, 23. I. 2004.

Orthocladiinae
4. *Diplocladius cultriger* Kieffer, 1908 (Fig. 53, Yamamoto 2010)
Specimens examined: 4♂♂, 2♀♀, Fujibashi, Tateyama-machi, Naka-Niikawa Gun, 2. II. 2005.

5. *Orthocladius frigidus* (Zetterstedt, 1838) (Fig. 63-C ,Yamamoto 2010)
Specimens examined: 2♂♂, 2♀♀, Fujibashi, Tateyama-machi, Naka-Niikawa Gun, 18. I. 2004; 1♂, as previous except Nanahime-daira, 28. I. 2005.

6. *Orthocladius kanii* (Tokunaga, 1939) (Fig. 63-D, Yamamoto 2010)
Specimens examined: 1♂, 1♀, Kanjoji, Nanto-shi, 1. II. 2004; 1♂, Ranjoyama, Tonami-shi, 18. III. 2005.

7. *Orthocladius saxosus* (Tokunaga, 1939) (Fig. 4-C)
Specimens examined: 1♂, 1♀, Fujibashi, Tateyama-shi, Naka-Niikawa Gun, 3. I. 2005.

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